Best Practices

Best Practice I: Activity Based Learning

***Title of the practice*: Activity Based Learning**

One of the notable best practices of Dwarkadas J. Sanghvi College of Engineering has been Activity Based Learning. College's philosophy of education emphasizes inculcating innovative thinking and problem solving skills into the students through activities like Automobile Design and Manufacturing, Hackathon, Robotics, Project Competition, Workshops, Guest Lectures by industrial experts and eminent professors, Industrial Visits etc. Each programme has at least one student chapter of professional bodies, a total of 10 student chapters which have been conducting these activities.

Goal

The institution is committed to providing a holistic teaching-learning environment to its students that goes beyond the standard curriculum by means of various co-curricular activities based learning, aided by this practice helps in realizing knowledge, application and skill based understanding.

The Context

The institution takes pride in empowering the students through "Activity Based Learning". The college faculty and students have responsibly engaged in different and sometimes challenging circumstances, fulfilling their role in realizing knowledge, application of knowledge and skill based understanding. Such activities have given impetus to experiential learning, and added enthusiasm in student community. They have also contributed to enriching and expanding the quality of academic work across specializations through valuable experience and insights gained by means of these activities.

The Practice

Bridging the gap in the curriculum through various activities/events as well as value added programmes under the ambit of 10 student chapters of professional bodies across all eight programmes of engineering has been one of the best practices. Co-curricular activities based learning, aided by this practice helps in realizing knowledge, application and skill based understanding through activities like Automobile Design and Manufacturing, Hackathon, Workshops, Hands-on Training, Robotics, Project Competitions and Technical Paper Presentations etc. Each programme has at least one student chapter under its ambit, which conducts additional workshop/training programmes, guest lectures by industrial experts & eminent professors, industrial visits and technical paper presentations.

These student chapters of eight programmes of engineering are listed below:

1.Department of Mechanical Engineering –
(i) Society of Automotive Engineers (SAE)
(ii) Indian Society of Heating, Refrigeration and Air-Conditioning Engineers (ISHRAE)
(iii) Robotics and Automation Society (RAS)

2. Department of Production Engineering –
Indian Society of Manufacturing Engineers (ISME)

3.Department of Biomedical Engineering –
Pacemaker

4. Department of Chemical Engineering –
Indian Institute of Chemical Engineers (IIChE)

5. Department of Computer Engineering –
Association for Computing Machinery (ACM)

6. Department of Electronics Engineering –
Institute of Electrical and Electronics Engineers (IEEE)

7. Department of Electronics and Telecommunication Engineering –
Institution of Electronics and Telecommunication Engineers (IETE)

8. Department of Information Technology –
Computer Society of India (CSI)

Evidence of success

1.Department of Mechanical Engineering

(i) Society of Automotive Engineers (SAE)

- A team of Mechanical and Production engineering students called DJS Kronos (All-Terrain Vehicle) designed, manufactured and tested an All-Terrain Vehicle (ATV). This team participated in BAJA SAE INDIA 2019 from 22nd January 2019 to 28th January 2019. The team won 1st Rank amongst Mumbai teams participated and stood 36th position among 280 teams participated at national level.

All-Terrain Vehicle (ATV)

(ii) Indian Society of Heating, Refrigeration and Air-Conditioning Engineers (ISHRAE)

- Students have participated in seminar on the topic HVAC technology products and environmental effects on 9th February 2019 by Prof Avinash Shaligram under ISHRAE.

(iii) Robotics and Automation Society (RAS)

- The team participated at the National DD-ROBOCON 2019 Competition held in June 2019 at IIT Delhi. The team stood in 21st position among the 106 teams participated.

RAS team in ROBOCON India 2019

2. Department of Production Engineering

--- Indian Society of Manufacturing Engineers (ISME)

- The ISME chapter of our college conducted a two-day workshop on 22nd and 24th September 2019 on the "CNC Machining " at LTIT, Mahape and "Machining and Fabrication" at the L&T Madh training campus. The workshops were conducted by industry experts who shared their knowledge and experience with us. A total of 57 students of SE Mechanical Engineering students benefitted through this training programme.

L&T Madh machine shop

3.Department of Biomedical Engineering

--- Pacemaker

- The symposium 2019 held on 25th March 2019- Connecting Technology to Life was arranged by department of Biomedical engineering and student chapter Pacemakers. Under this symposium, there was a keynote address by Mr. Vishwanath Eduapalli, HOD-Biomedical of Jaslok Hospital and Dr. Ravi Mohanka- Head Surgeon and Liver Transplant surgeon at Global Hospitals.

Demonstration- Blood Gas Analyser

4. Department of Chemical Engineering

--- Indian Institute of Chemical Engineers (IIChE)

- ALChemiE 19 (Applied Learning in Chemical Engineering) was held under IIChE chapter on March 29, 30th, 2019

ALChemiE 2019

5. Department of Computer Engineering

--- Association for Computing Machinery (ACM)

- An intercollegiate event called Line of Code (LOC) under ACM chapter on March 16th and 17th, 2019.

LOC

6. Department of Electronics Engineering

--- Institute of Electrical and Electronics Engineers (IEEE)

IEEE Seminar on Self Driving Cars - TESLA & Robotics Workshop by Vivek Nar – IEEE Resource & German Energiewende exhibition at IIT B.

7. Department of Electronics and Telecommunication Engineering –

--- Institution of Electronics and Telecommunication Engineers (IETE)

- The Spark'19 competitions were held on 12th April, 2019 where the top 30 participating teams competed amongst themselves to win the competition.

8. Department of Information Technology

--- Computer Society of India (CSI)

- Codeshastra 5.0, a 24-hour hackathon was conducted on 2nd & 3rd March, 2019 to challenge the coding and collaboration skills of students and encourage them to provide powerful solution for the given problem statement. The problem statements given are related to the field "Financial Technology (FinTech)". A total of 70 teams participated.

Codeshastra 5.0 –hackathon event

Best Practice II: Soft Skills Training

1. **Title of the Practice**	**Pre-Placement Package for final year students and Soft Skills Sessions for the First Year students**
2. **Goal**	This course aims to strengthen the employability and interpersonal skills of students making them industry ready in order to progress professionally in the global world. The objective is to give each student a realistic perspective of work and work expectations, to help formulate problem solving skills, to guide students in making appropriate and responsible decisions in view of being a good leader, to create a desire to fulfil individual goals, explaining them the significance of self-motivation and to educate students about unproductive thinking, self-defeating emotional impulses and behaviours.
3. **The Context**.	The soft skills course was designed to cater the needs of the engineering students including diploma, which was done successfully. Soft Skills sessions for the first year students are based on helping students develop their self-confidence, improve communication skills, develop team working and leadership skills Pre-Placement Package sessions are designed keeping in mind the industry relevant skills which will help students to put forward and express their thoughts and technical learning in a positive way.
4. **The Practice**	• The Soft skills development team has designed a preplacement "Employment training package" for Semester VII students to help them with Resume building skills, participation in Group Discussion, Interview skills and Corporate ready "Work skills". The Soft skills development team has also designed programmes spread across the semesters and branches with focus on multiple topics. Few of them pertaining to the areas of the overall development of the students. • Soft Skills helps in developing one's personality in the professional as well as personal life. This includes emotional intelligence, Leadership skills, Motivation, Team Building, Assertiveness, Conflict

	Resolution and Time Management which are taught through role plays, games, case study, skits and other such activities.
	• The course includes the importance of teamwork, selection of team members, the various stages in building a team; Abraham Maslow's Theory of Motivation, different motivation factors, kinds of motivation; defining effective leadership, differentiating between a leader and a boss and illustrating the right team spirit through various activities; resolving a problem by identifying the problem, types of information to gather and key questions to ask in problem solving. It also uses basic brainstorming tools to generate ideas for solutions and lastly evaluating potential solutions; Stephen Covey's Time Management matrix, good time management habits, prioritizing your time and the 80/20 rule.
	• Employability skills include Group Discussions, Resume Writing, Interview skills, Presentation Skills and Sop's. Mock group discussions in small batches are conducted in order to instil confidence in the students and bring out the leadership qualities in them. Mock interviews are conducted to prepare students for the placements.
5. **Evidence of Success**	Students' feedback and 100% placement in the industry indicates the success of this practice. It was found that students become self-aware about the professional and personal growth expected by the industry. They understand the importance of soft skills and implement it in real life situations.
6**. Problems**	Training soft skills always be challenging since it requires people to change the way they communicate, and habits that have been developed over a lifetime. Resources required will be in the form of soft skills trainers and industry experts who can identify, understand and impart these skills through simulations.